

REMARKS

Claims 1-6 are pending in this application with claims 1 and 3 being amended and claim 6 being newly added by this response. Claims 1 and 3 have been amended for clarity purposes and to remove the phrases “the substrate forming part,” “quasi-constant,” and “by maintaining its” as suggested by the Office Action. Support for these amendments can be found throughout the Specification and more specifically on page 2, line 26-page 3, line 2 and page 6, lines 4-12. Support for claim 6 can be found throughout the Specification and more specifically on page 2, line 26-page 3, line 2; page 3, lines 5-12; page 3, lines 20-23 and in Figures 2, 3 and 4. Therefore, Applicants respectfully submit that no new subject matter is being added by these claim amendments.

Objection to the Specification

The Specification is objected to for certain informalities. The Specification has been amended to address the informalities in accordance with the comments in the Office Action by adding section headings and correcting typographical errors. Additionally, the Specification has been objected to for failing to provide proper antecedent basis for the claimed subject matter as claimed in claim 3. Claim 3 has been amended for purposes of clarity. Applicants respectfully submit that claim 3, as amended, is fully supported by the Specification on page 5, lines 3-21. Specifically, the present application recites

“it is possible to **adjust** the height of the substrate in the junction plane to obtain a width identical or as close as possible to that of the rib. Then, to return to the most suitable thickness of substrate, for the microstrip line 7, it is sufficient to gradually vary the thickness of the foam plate constituting the substrate according to the longitudinal direction A ... in figure 1, the impedance matching of the microstrip line is illustrated by a continuous linear reduction (shown as the dotted lines of 12) of the width of the microstrip line over a certain length L of the microstrip line” (Specification, page 5, lines 6-21).

Therefore, it is respectfully submitted that no additional amendments to the Specification are necessary, as proper antecedent basis is provided for amended claim 3. Consequently, it is respectfully submitted that this objection has been satisfied and should be withdrawn.

Objection to the Drawings

The Drawings are objected to under 37 CFR 1.83(a) as not showing every feature of the invention as specified in claim 3. Applicants respectfully submit that amended claim 3 is

clearly shown in the drawings. Specifically, Figure 1, reference no. 11 (dotted line) shows a continuous linear reduction of the thickness of the substrate, and Figure 1, reference no. 12 (dotted line) shows a continuous linear reduction of the width of the microstrip line over a certain length L of the microstrip line (*see* Specification, page 5, lines 17-21). Therefore, it is respectfully submitted that the features of claim 3 are depicted in the Drawings and that no drawing amendments are necessary. Consequently, it is respectfully submitted that this objection is satisfied and should be withdrawn.

Rejection of claims 1-5 under 35 U.S.C. 112, second paragraph

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as invention. Claims 1 and 3 have been amended to remove all objectionable phrases, in accordance with the suggestions made in the Office Action. Consequently, it is respectfully submitted that this rejection is satisfied and should be withdrawn.

Rejection of claims 1 and 2 under 35 U.S.C. 103(a)

Claims 1 and 2 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. (U.S. Patent No. 6,265,950) taken in combination with Hamasaki (U.S. Patent No. 3,265,995).

The present claimed invention provides a transition between a waveguide and a microstrip line including a single bar of synthetic material. The single bar of synthetic material includes a first part with metallized lateral faces to form a waveguide and a second part extending from the first part. The second part forms a substrate for a microstrip line. The bar presents, at a level of transition between the first part and the second part, a shoulder defining an upper plane of the waveguide forming part and an upper plane of the second part forming the substrate for the microstrip line. Between the two upper planes, a rib having a metallized base and walls is included. The metallization of the base continues by the microstrip line realized on the second part forming a substrate. The base common to the first and second parts is fully metallized. Schmidt in view of Hamasaki does not disclose the features of the present claimed invention and thus, does not make the present claimed invention unpatentable.

Schmidt describes a cost-effective stamping or die-casting or cold-molding process or a plastic injection-molding process with subsequent metal plating with at least one ridge situated in the waveguide, which reduces the waveguide cross section in the direction of the stripline. A cross section is included which tapers conically in the direction of the stripline. (see Abstract)

Schmidt may describe a waveguide and a ridge ("ridge 5") along with a strip ("stripline 3"). The ridge 5 has a tapered cross section for a smooth transition between the rectangular cross section of the waveguide ("waveguide 1") and the stripline. However, Schmidt is wholly unlike the present claimed invention which consists "of a single bar of synthetic material" as recited in claim 1 of the present invention. Rather, Schmidt describes a stripline which is separate from the waveguide. Schmidt describes that

"[t]his ridge 5, which forms a cross-section transformation, is **bonded** to stripline 3 at the point which forms the smallest waveguide cross section. Bonding can take place in various ways. For example, substrate 2 with stripline 3 can, as can be seen in FIG. 1a, be inserted into waveguide 1 below ridge 5 so that ridge 5 ... can be bonded to it through soldering or gluing ... [or] via a conductive ribbon" (col. 2, lines 34-42).

Thus, Schmidt merely bonds the stripline to the ridge using various bonding methods. To the contrary, the present claimed invention consists "of a single bar of synthetic material" as recited in claim 1 of the present invention.

Additionally, the Office Action on page 4 correctly admits that "Schmidt et al differs from the claimed invention in that its metal waveguide and microstrip structure are not formed by a 'bar' of synthetic (i.e. dielectric) material with appropriate metallic coating thereon to define the waveguide portion ... [and] the microstrip portion." However, even if the system of Schmidt was combined with the system of Hamasaki, as suggested in the Office Action, the combined system would not make the present claimed invention unpatentable.

Hamasaki describes an electromagnetic wave transmission device for coupling strips or coaxial transmission lines to waveguides. "[A] strip transmission line propagating electromagnetic wave energy in the TEM wavemode is collinearly disposed with and abuts against a section of the dielectric-filled rectangular waveguide. The center conductor of the

strip transmission line protrudes solely in the longitudinal direction a short distance into the waveguide” (col. 2, lines 5-13). Thus, in Hamasaki, the junction is between at least two separate elements—the waveguide and the transmission line. This is wholly unlike the present claimed invention which is a single bar of synthetic material. Therefore, Hamasaki, similarly to Schmidt, neither discloses nor suggests “[a] transition between a waveguide and a microstrip line, consisting of a single bar of synthetic material” as recited in claim 1 of the present invention. Additionally, the Office Action on pages 4-5 correctly admits that Hamasaki does not provide a “rib” structure, as in the present claimed invention. However, even combining the systems of Schmidt and Hamasaki, as suggested by the Office Action, would not make the present claimed invention unpatentable.

Even if the systems of Schmidt and Hamasaki were combined, the combined system would yield a waveguide which is attached to a stripline using a bonding technique, where the waveguide is dielectric filled. However, the combined system, similar to the individual systems of Schmidt and Hamasaki, would neither disclose nor suggest “[a] transition between a waveguide and a microstrip line, consisting of a single bar of synthetic material” as recited in claim 1 of the present invention. Nowhere in the combined system is there any mention or suggestion of the waveguide and microstrip line consisting of **a single bar** of synthetic material, as in the present claimed invention. Therefore, as the combined system merely bonds the stripline to the waveguide, the combined system of Schmidt and Hamasaki neither discloses nor suggests “[a] transition between a waveguide and a microstrip line, consisting of a single bar of synthetic material” as recited in claim 1 of the present invention.

Claim 2 is dependent on claim 1 and is allowable for the same reasons presented above with respect to claim 1.

In view of the above remarks and amendments to the claims it is respectfully submitted that Schmidt and Hamasaki, when taken alone or in combination, do not make the present claimed invention unpatentable. It is further respectfully submitted that this rejection is satisfied and should be withdrawn.

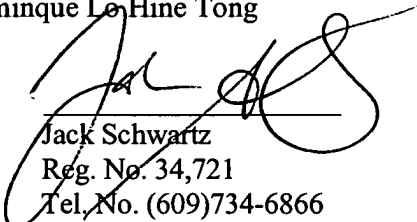
New claim 6 is also allowable over Hamasaki and Schmidt because Hamasaki and Schmidt, when taken alone or in combination, neither disclose nor suggest "working a foam bar to obtain a rectangular form ... fully metallizing the foam bar ... cutting transversally the foam bar at the extremity of the rib to obtain the substrate of the microstrip line" as recited in claim 6 of the present invention. As argued with respect to claim 1, Hamasaki and Schmidt, when taken alone or in combination, merely bond a waveguide to a stripline. This is wholly unlike claim 6 in which a foam bar is cut to obtain a microstrip line. Therefore, Hamasaki and Schmidt, when taken alone or in combination, would not make the present claimed invention as claimed in claim 6 unpatentable.

Having fully addressed the Examiner's rejections, it is believed that, in view of the amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No additional fee is believed due. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

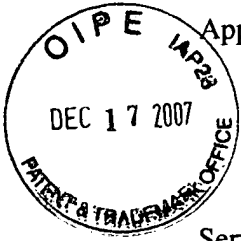
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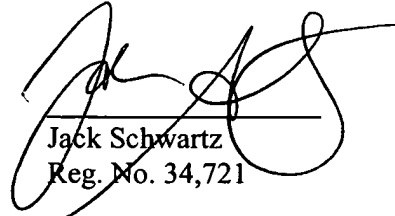
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